

Riedel's Thyroiditis in an Elderly Male Patient: A Rare Entity

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ABSTRACT

Riedel's thyroiditis (RT) is a rare fibrosclerotic infiltrative thyroid disorder of unclear aetiology. It has been reported in 0.06% of thyroid surgeries and is more common in women. A 60-year-old euthyroid male presented with thyroid swelling and sinus discharge since three years, associated with pain and fever. Near total thyroidectomy revealed right lobe measuring 5x2.5x2 cm, well encapsulated, firm to hard with resistance on cutting. Microscopic examination showed variable sized colloid filled follicles with intervening areas of dense fibrosis admixed with lymphocytic aggregates and perivascular fibrosis extending to the thyroid capsule. The diagnosis of Riedel's thyroiditis was made on histopathological examination. Hence, we would like to emphasize that Riedel's thyroiditis requires diagnostic thyroidectomy and histopathological examination for confirmation.

Keywords: Fibrosis, Histopathological confirmation, Riedel's thyroiditis, Thyroidectomy

CASE REPORT

A 60-year-old man visited the outpatient department with a very hard, fixed lump that had been present on his neck along with sinus discharge for three years, associated with pain and fever which started five days before admission to hospital. The patient had previously taken anti-thyroid agents prescribed by a private hospital but did not undergo additional tests or follow-up related to his hyperthyroidism. He did not show any symptoms associated with thyrotoxicosis on admission. The patient was conscious and febrile. His blood pressure was 130/90 mm Hg, pulse 75 beats per minute and respiration rate was 22 breaths per minute. There were no enlarged cervical lymph nodes and no jugular vein engorgement was noted. A hard, fixed and tender thyroid lesion that measured approximately 5x3 cm was palpated. A sinus with serous discharge measuring approximately 0.2-0.3 cm was noted in the anterior region of the neck [Table/Fig-1a,b]. Systemic examination of the patient was within normal limits. Routine hematological, biochemical investigations including thyroid function tests were within normal limits. Chest X-ray PA view showed right to left shift of the trachea. Clinical diagnosis showed a possibility of thyroid cancer. USG of thyroid gland showed a well-defined irregular and hypoechoic lesion measuring 4.5x2.5cm in diameter, along with large scattered dense calcifications, in the right lobe of thyroid. CECT scan of the neck showed a 4.5x2.5 cm lesion occupying most of the right lobe of the thyroid. Both USG and CECT scan along with the previous FNAC report was suspicious of adenomatous goiter but the possibility of thyroid cancer was not ruled out. A repeat FNAC yielded scant material and was equivocal for comment. Hence, a near total thyroidectomy was done for histological confirmation.

Grossly, near total thyroidectomy specimen revealed right lobe measuring approximately 5x2.5x2 cm, encapsulated, firm to hard with resistance on cutting. Cut surface showed white areas with foci of calcification. The left lobe measured 4x2x1 cm and showed normal gray brown thyroid parenchyma with focal fibrous area. Microscopic examination showed variable sized colloid filled follicles with intervening areas of dense fibrosis admixed with lymphocytic aggregates and perivascular fibrosis extending to the thyroid capsule [Table/Fig-2].

DISCUSSION

Riedel's thyroiditis (RT), also known as Riedel's struma, fibrous thyroiditis, and invasive thyroiditis is an extremely rare with an incidence of 0.06% of surgical thyroid diseases [1]. The disease was first recognized by Riedel in 1896 It represents a manifestation of the group of idiopathic disorders generically known as inflammatory fibrosclerosis. As such, it may be seen coexisting with mediastinal or retroperitoneal fibrosis, sclerosing cholangitis, or inflammatory pseudo tumour of the orbit [1]. It affects adults and elderly patients and shows a slight predilection for females [2]. Riedel's presentation is complex, including a thyroid mass associated with swelling and dysphagia, characteristic biochemical abnormalities such as hypocalcemia and hypothyroidism, as well as the involvement of a wide range of other organ systems. According to Cleveland Clinic's report, 64% of total patients had normal thyroid function, 32% had hypothyroidism, and 4% had hyperthyroidism [3]. In rare cases, it can cause hoarseness if the enlarged thyroid damages the recurrent laryngeal nerve. In our case, the patient was euthyroid with past history of intermittent treatment for hyperthyroidism



[Table/Fig-1a]: Gross appearance of the neck. A very hard, fixed lesion with sinus discharge is seen in the neck **[Table/Fig-1b]:** Enlarged right lobe of the thyroid with sinus tract **[Table/Fig-2]:** Extensively hyalinised fibrous tissue replacing the thyroid gland. Fibrosis and inflammation extended to the thyroid capsule (H&E, x40).

with no follow up. Riedel's thyroiditis is a gradual process. In most cases the disease is bilateral. In some cases one lobe is larger and rarely only one lobe is involved.

Although the aetiologic mechanisms underlying Riedel's thyroiditis are unclear, the prevailing view is that it is part of a generalized fibro-inflammatory process that also involves other organs [4]. Some studies consider an immune disorder to be the most likely cause [3,5]. Recent research has shown that immunoglobulin G4-related systemic disease (IgG4-RSD) is likely involved [4,6-10]. It is difficult for physicians to distinguish Riedel's thyroiditis from malignant neoplasms of the thyroid clinically because both clinical examination and imaging of Riedel's thyroiditis suggests malignancy [11]. Though the most important diagnostic tool for thyroid disease is FNAC under USG guidance, Riedel's thyroiditis usually cannot be diagnosed accurately by preoperative cytology [12]. USG of Riedel's thyroiditis shows a hypo-echoic and hypo-vascular mass with extension into adjacent soft tissues. However, this appearance is nonspecific and can be seen in other disease processes that present with diffuse fibrotic involvement, such as Hashimoto thyroiditis, lymphoma, and thyroid carcinoma. The extent of fibrosis and compression of the trachea and/or esophagus is easily defined by CT, in which the thyroid appears hypo-dense to normal, and invasion of nearby tissues might be observed [12]. CT reveals a hypo-dense, infiltrative mass that might suggest a malignant process, although malignant neoplasms usually appear heterogeneous. MRI of the Riedel's thyroiditis is not well known. PET scan might be helpful for evaluating disease activity and patient's response to corticosteroid therapy. Hence, various imaging modalities,

including USG, CT, MRI, and PET, can be performed for the diagnosis of Riedel's thyroiditis, but may not be helpful for the definite diagnosis of Riedel's thyroiditis and differentiation from thyroid malignancy. The differential diagnosis and confirmation of Riedel's thyroiditis requires diagnostic thyroidectomy and histopathological confirmation. Most Riedel's thyroiditis cases have good outcome.

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